



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/502,501	07/23/2004	Hiroaki Yamaguchi	57731US008	5777
32692	7590	10/19/2006	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			FEELY, MICHAEL J	
			ART UNIT	PAPER NUMBER
			1712	

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/502,501

Applicant(s)

YAMAGUCHI ET AL.

Examiner

Michael J. Feely

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 20050912,20041025.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

Art Unit: 1712

DETAILED ACTION

Pending Claims

Claims 7-12 are pending.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

Art Unit: 1712

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mahoney et al. (US Pat. No. 6,265,459 or US Pat. No. 6,482,868) in view of Smith US Pat. No. 3,998,983). The Mahoney references are parent and child applications. All citations are drawn to the parent application (US Pat. No. 6,265,459).

Regarding claims 7-11, Mahoney et al. disclose: (7) a cationic polymerizable adhesive (Abstract; column 14, lines 15-27) comprising: (a) a cationic polymerizable monomer selected from an epoxy monomer, a vinyl ether monomer, or a mixture thereof (column 4, line 10 through column 5, line 27); (b) a cationic polymerization catalyst being an iron-arene complex having an absorption peak in a visible light range of from 360 to 830 nm (column 5, line 28 through column 9, line 8); and (c) a solvent for the cationic polymerization catalyst (column 12, lines 28-51);

(9) an anisotropically electro-conductive adhesive comprising the cationic polymerization adhesive composition claimed in claim 7 and electro-conductive particles (Abstract; column 14, lines 15-27);

Art Unit: 1712

(10) an adhesive film formed by applying the cationic polymerization adhesive composition claimed in claim 7 onto a separator and drying the coating film (Abstract; column 14, lines 15-27); and

(11) an anisotropically electro-conductive adhesive film formed by applying the anisotropically electro-conductive adhesive composition claimed in claim 9 onto a separator and drying the coating film (Abstract; column 14, lines 15-27).

Regarding claim 12, Mahoney et al. disclose: (12) an anisotropically electro-conductive adhesive composition comprising a cationic polymerizable adhesive (Abstract; column 14, lines 15-27) comprising: (a) a cationic polymerizable monomer selected from an epoxy monomer, a vinyl ether monomer, or a mixture thereof (column 4, line 10 through column 5, line 27); (b) a cationic polymerization catalyst (column 5, line 28 through column 9, line 8); and (c) a solvent for the cationic polymerization catalyst (column 12, lines 28-51); and electro-conductive particles (Abstract; column 14, lines 15-27).

Regarding all of the above claims, Mahoney et al. discloses the use of a “good solvent” wherein it, “can be used to assists in the dissolution of the initiator system in the polymerizable monomers, and as a processing aid,” (column 12, lines 28-30). However, they fail to disclose: (7 & 12) the use of a solvent that is a mixture of “good solvent” and a “poor solvent”; (8) wherein a weight ratio of the “good solvent” to the “poor solvent” is within a range from 5:95 to 60:40.

Smith discloses a catalyzed liquid epoxy resin system featuring a dual solvent system (Abstract). The dual solvent system includes a “good solvent”, such as ketones, and a co- “poor solvent”, such as benzene or arene (column 6, line 66 through column 7, line 24). The ratio of the “good solvent” to the “poor solvent” is from about 30:70 to about 70:30 (column 6, lines 19-

Art Unit: 1712

21). The “good solvent” acts as a carrier for the catalyst, and it assists in the dissolution of the catalyst in the polymerizable monomers. The “poor solvent” assists in getting the epoxide into solution and prevents blistering and void formation when the solvent is flashed after application to substrate. Although Smith discloses a system used to impregnate a mica tape, one skilled in the art would have been motivated to apply the dual solvent technique of Smith to other epoxy-based coating and adhesion methods. This is because: (a) the dual solvent technique allows for optimum solubility of all components, and (b) the dual solvent technique allows for optimum volatility characteristics for flash off.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a dual solvent system, as taught by Smith, in the adhesive composition of Mahoney et al. because Smith disclose that the dual solvent system is beneficial to catalyzed liquid epoxy resin systems, resulting in optimum solubility of all components and optimum volatility characteristics for flash off.

International Search Report

6. The International Search Report cites three X-references. All of these references have been considered, and they fail to independently teach or suggest the instant invention for the reasons set forth in the IPER.

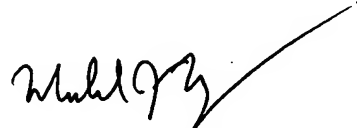
Art Unit: 1712

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Feely whose telephone number is 571-272-1086. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Michael J. Feely
Primary Examiner
Art Unit 1712

October 16, 2006

MICHAEL FEELY
PRIMARY EXAMINER